CLAIMS

What is Claimed is:

1. A method for fabricating a semiconductor device, comprising the steps of:

forming a thin film made of an inorganic material;

forming a resist film containing carbon on the thin film and thereafter patterning the formed resist film to form a resist pattern from the resist film;

exposing the resist pattern to a gas containing sulfur; and

performing dry etching of the thin film using as a mask the resist pattern exposed to the gas containing sulfur.

2. The method for fabricating a semiconductor device of Claim 1, wherein

the inorganic material contains silicon, and an etching gas employed for the dry etching is a fluorocarbon gas.

3. The method for fabricating a semiconductor device of Claim 1, wherein

the gas containing sulfur is sulfur dioxide.

4. The method for fabricating a semiconductor device of Claim 1, wherein

the gas containing sulfur is in a plasma state.

5. The method for fabricating a semiconductor device of Claim 1, wherein

the step of exposing the resist pattern to the gas containing sulfur and the step of performing dry etching constitute the same step.

6. The method for fabricating a semiconductor device of Claim 1, wherein

the line width of the resist pattern is 200nm or less.

7. The method for fabricating a semiconductor device of Claim 1, wherein

the value of the ratio of the height of the resist pattern to the line width thereof is 2.8 or more.